

Contract No. R001-003

“Feasibility Study of a Biomass Supply for the Spiritwood Industrial Park”

Submitted by Great River Energy along with the following five Co-applicants:

Great Plains Institute

North Dakota Association of Rural Electric Cooperatives

North Dakota Department of Agriculture

North Dakota Farmers Union

North Dakota Natural Resources Trust

Principal Investigator: Sandra Broekema, Great River Energy

PARTICIPANTS

| Sponsor | Cash Cost Share | |
|--|---------------------------|-----------|
| Great River Energy | \$ 75,000 | |
| Great Plains Institute | \$ 50,000 | |
| North Dakota Farmers Union | \$ 10,000 | |
| North Dakota Industrial Commission | <u>\$109,000</u> | |
| Cash Total | \$244,000 | |
| | | |
| | In-Kind Cost Share | |
| Great River Energy | \$125,000 | |
| North Dakota Natural Resources Trust | \$ 25,000 | |
| Great Plains Institute | \$ 50,000 | |
| North Dakota Rural Electric Cooperatives | \$ 10,000 | |
| North Dakota Game and Fish Dept. | \$ 15,000 | |
| U. S. Fish & Wildlife | <u>\$ 5,000</u> | |
| In-Kind Total | \$230,000 | |
| Total Project Cost | | \$474,000 |

Project Schedule – 12 months
Contract Date – July 28, 2008
Start Date – July 1, 2008
Completion Date – June 30, 2009

Project Deliverables:
Status Report: October 31, 2008
Draft Final Report: April 30, 2009
Final Report: June 30, 2009

OBJECTIVE/STATEMENT OF WORK:

This project will perform a detailed technical evaluation of the prospects for integrating a biomass supply into Spiritwood Station, part of the new Spiritwood industrial park in

Jamestown, North Dakota. Great River Energy (GRE) proposes to co-fire up to 10 percent biomass in Spiritwood Station. This project will evaluate the types of biomass that might be delivered to the project and the delivered cost of biomass from various sources, including such factors as production, raw material handling and baling, loading, transportation, and on-site handling. It will evaluate densification options to identify the lowest cost strategy for transportation and logistics, and develop a detailed project budget and process schematic for supplying biomass to the project. Finally, it will evaluate the prospects for recruiting existing farmland into perennial energy crops. The final outcome of the project will be to allow GRE to run biomass supply numbers into its pro forma model for the project and make decisions about which types of biomass to integrate into the project.

This project will be conducted through a partnership of industry, wildlife conservation groups, agricultural interests, and the financial community that have been meeting for the past year to evaluate opportunities to promote conservation-friendly bioenergy projects and to develop a commercial business model for best practice biomass production and utilization. If successful, this project could help Spiritwood Station demonstrate a new model of renewable energy production, provide additional value to agricultural producers and rural communities, and offer a replicable example for other coal-fired power plants in North Dakota.

Note: Portions of the status and final reports will be confidential.

STATUS

Contract has been signed and work has been started.